

**ARIZONA CTE CAREER PREPARATION STANDARDS & MEASUREMENT CRITERIA****INDUSTRIAL ELECTRICIAN/LINEWORKER 46.0300.30****STANDARD 1.0 – APPLY BASIC ELECTRICAL THEORY**

1.1	Interpret electrical terms
1.2	Identify electrical symbols
1.3	Construct BASIC electrical circuits
1.4	Compute for voltage, current, resistance, and power
1.5	Operate meters to measure electrical properties
1.6	Identify transformer applications
1.7	Apply electronic applications to transmission and distribution (T & D) systems

**STANDARD 2.0 – DEMONSTRATE SCIENCE KNOWLEDGE AND SKILLS**

2.1	Explain molecular action as a result of temperature extremes, chemical reaction, and moisture content
2.2	Discuss the role of creativity in constructing scientific questions, methods, and explanations
2.3	Formulate investigable questions, construct investigations, collect and evaluate data, and develop scientific recommendations based on findings
2.4	Identify types of pressure measurements

**STANDARD 3.0 – DEMONSTRATE MATHEMATICS SKILLS**

3.1	Apply knowledge of arithmetic operations
3.2	Analyze and apply data and measurements to solve problems and interpret documents
3.3	Read and interpret measuring devices (e.g., rules and tapes)
3.4	Use the metric system
3.5	Solve problems for volume, weight, area, circumference, and perimeter measurements for rectangles, squares, and cylinders
3.6	Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet, and inches

**STANDARD 4.0 – DEMONSTRATE KNOWLEDGE OF ELECTRICAL DISTRIBUTION AND TRANSMISSION SYSTEMS**

4.1	Describe distribution systems
4.2	Describe transmission systems

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4.3	Describe underground systems
4.4	Describe street lighting systems
<b>STANDARD 5.0 – DEMONSTRATE KNOWLEDGE OF INSTALLING ELECTRICAL DISTRIBUTION AND TRANSMISSION SYSTEMS</b>	
5.1	Describe the process of installing distribution systems
5.2	Describe the process of installing transmission systems
5.3	Describe the process of installing underground systems
5.4	Describe the process of installing street lighting systems
<b>STANDARD 6.0 – DEMONSTRATE KNOWLEDGE OF MAINTAINING ELECTRICAL DISTRIBUTION AND TRANSMISSION SYSTEMS</b>	
6.1	Describe the process of maintaining overhead systems
6.2	Describe the process of maintaining underground systems
<b>STANDARD 7.0 – DEMONSTRATE THE IMPORTANCE OF HEALTH AND SAFETY AS RELATED TO THE INDUSTRY</b>	
7.1	Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments
7.2	Explain emergency procedures for common workplace accidents
7.3	Create a disaster and/or emergency response plan
7.4	Explain the Right-to-Know Law
7.5	Identify potential health problems related to exposure of chemicals and hazardous materials
7.6	Explain the importance of pre-job briefing
<b>STANDARD 8.0 – DEMONSTRATE KNOWLEDGE OF ELECTRICAL APPARATUSES</b>	
8.1	Check fuse cutouts
8.2	Check high voltage switches
8.3	Check circuit breakers and regulators
8.4	Perform dielectric tests
8.5	Perform load test
8.6	Maintain all electrical components

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<b>STANDARD 9.0 – RECOGNIZE ELECTRICAL LINE SERVICE TOOLS AND EQUIPMENT AND EXPLAIN THEIR FUNCTIONS</b>	
9.1	Utilize hand tools safely
9.2	Utilize hotline tools safely
9.3	Utilize rubber protection as needed
9.4	Operate shop power tools
9.5	Operate hoist
9.6	Operate multimeter
9.7	Operate clamp-on ammeter
9.8	Operate phase rotation meter
<b>STANDARD 10.0 – DEMONSTRATE KNOWLEDGE OF UTILITY MACHINERY OPERATION AND MAINTENANCE IN THE ELECTRICAL LINE INDUSTRY</b>	
10.1	Describe safe work practice for operating machinery
10.2	Describe routine daily inspection to trucks and mobile equipment
10.3	Inspect hydraulic systems for operational integrity
10.4	Describe dielectric testing of an insulated boom section
10.5	Clean and maintain dielectric bucket liners and boom insulators
10.6	Maintain and install vehicle grounds
10.7	Inspect equipment for safe operational conditions
10.8	Safely load, secure, and unload a variety of equipment
10.9	Read a load lifting chart
10.10	Plan a lift
10.11	Accurately give hand signals to a boom truck operator
10.12	Describe the steps in setting up an aerial truck for operation
10.13	Research the requirements for obtaining and maintaining a CDL (commercial driver's license)